



SEQUENCE LISTING

<110> Vale, Ronald

Hartman, James

<120> Assays for the Detection of Microtubule Depolymerization Inhibitors

<130> UCSD-04765

<140> 09/673,222

<141> 2000-10-13

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<151> 1999-04-13

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<151> 1998-04-14

<160> 16

<170> PatentIn version 3.0

<210> 1

<211> 517

<212> PRT

<213> Strongylocentrotus purpuratus

<220>

<221> misc_feature

<223> katanin p60 subunit

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35 40 45Lys His Gln Trp Gln Thr Ile Arg Gln Glu Leu Ser Gln Glu Tyr Glu
50 55 60His Val Lys Asn Ile Thr Lys Thr Leu Asn Gly Phe Lys Ser Glu Pro
65 70 75 80Ala Ala Pro Glu Pro Ala Pro Asn His Gly Arg Ala Ala Pro Phe Ser
85 90 95

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Pro	Ser	Asp	Arg	Arg	Gly	Asp	Ala	Arg	Ser	Gly	Gly	Gly	Arg	Gly	
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Lys	Asp	Lys	Lys	Ala	Pro	Ser	Gly	Glu	Glu	Gly	Asp	Glu	Lys	Lys	Phe
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Glu	Met	Ala	Arg	Phe	Tyr	Ala	Pro	Ser	Thr	Ile	Phe	Ile	Asp	Glu	Ile
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Asp	Ser	Ile	Cys	Ser	Lys	Arg	Gly	Thr	Gly	Ser	Glu	His	Glu	Ala	Ser
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Arg	Arg	Val	Lys	Ser	Glu	Leu	Leu	Ile	Gln	Met	Asp	Gly	Val	Ser	Gly
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Pro	Ser	Ala	Gly	Glu	Glu	Ser	Ser	Lys	Met	Val	Met	Val	Leu	Ala	Ala
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Thr	Asn	Phe	Pro	Trp	Asp	Ile	Asp	Glu	Ala	Leu	Arg	Arg	Arg	Leu	Glu
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Lys Ser Ile Ala Glu Lys Met Asp Gly Tyr Ser Gly Ala Asp Ile Thr
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 Asn Val Cys Arg Asp Ala Ser Met Met Ala Met Arg Arg Arg Ile Gln
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 Gly Leu Arg Pro Glu Glu Ile Arg His Ile Pro Lys Glu Glu Leu Asn
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 Gln Pro Ser Thr Pro Ala Asp Phe Leu Leu Ala Leu Gln Lys Val Ser
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35 40 45
Gln Asn Cys Ile Ile Ser Leu Ser Gly His Thr Ser Pro Val Asp Ser
50 55 60
Val Lys Phe Asn Ser Ser Glu Glu Leu Val Val Ala Gly Ser Gln Ser
65 70 75 80
Gly Thr Met Lys Ile Tyr Asp Leu Glu Pro Ala Lys Ile Val Arg Thr
85 90 95
Leu Thr Gly His Arg Asn Ser Ile Arg Cys Met Asp Phe His Pro Phe
100 105 110
Gly Glu Phe Val Ala Ser Gly Ser Thr Asp Thr Asn Val Lys Leu Trp
115 120 125

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 Gln Val Asn Met Ile Lys Phe Ser Pro Asp Gly Lys Trp Leu Val Thr
 145 150 155 160
 Ala Ser Glu Asp Thr Thr Ile Lys Leu Trp Asp Leu Thr Met Gly Lys
 165 170 175
 Leu Phe Gln Glu Phe Lys Asn His Thr Gly Gly Val Thr Gly Ile Glu
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 Phe His Pro Asn Glu Phe Leu Leu Ala Ser Gly Ser Ser Asp Arg Thr
 195 200 205
 Val Gln Phe Trp Asp Leu Glu Thr Phe Gln Leu Val Ser Ser Thr Ser
 210 215 220
 Pro Gly Ala Ser Ala Val Arg Ser Ile Ser Phe His Pro Asp Gly Ser
 225 230 235 240
 Tyr Leu Phe Cys Ser Ser Gln Asp Met Leu His Ala Phe Gly Trp Glu
 245 250 255
 Pro Ile Arg Cys Phe Asp Thr Phe Ser Val Phe Trp Gly Lys Val Ala
 260 265 270
 Asp Thr Val Ile Ala Ser Thr Gln Leu Ile Gly Ala Ser Phe Asn Ala
 275 280 285
 Thr Asn Val Ser Val Tyr Val Ala Asp Leu Ser Arg Met Ser Thr Thr
 290 295 300
 Gly Ile Ala Gln Glu Pro Gln Ser Gln Pro Ser Lys Thr Pro Ser Gly
 305 310 315 320
 Gly Ala Glu Glu Val Pro Ser Lys Pro Leu Thr Ala Ser Gly Arg Lys
 325 330 335
 Asn Phe Val Arg Glu Arg Pro His Thr Thr Ser Ser Lys Gln Arg Gln
 340 345 350
 Pro Asp Val Lys Ser Glu Pro Glu Arg Gln Ser Pro Thr Gln Asp Glu
 355 360 365
 Gly Val Lys Asp Asp Asp Ala Thr Asp Ile Lys Asp Pro Asp Ser Tyr
 370 375 380
 Ala Lys Ile Phe Ser Pro Lys Thr Arg Val Asp His Ser Pro Glu Arg
 385 390 395 400
 Asn Ala Gln Pro Phe Pro Ala Pro Leu Asp Val Pro Gly Ala Gln Glu
 405 410 415
 Pro Glu Pro Phe Lys His Pro Pro Lys Pro Ala Ala Ala Ala Val
 420 425 430
 Ala Pro Val Ser Arg Ala Pro Ala Pro Ser Ala Ser Asp Trp Gln Pro
 435 440 445

Ala Gln Ala Asn Pro Ala Pro Asn Arg Val Pro Ala Ala Thr Lys Pro
 450 455 460
 Val Pro Ala Gln Glu Val Ala Pro Ser Arg Lys Pro Asp Pro Ile Ser
 465 470 475 480
 Thr Ile Ile Pro Ser Asp Arg Asn Lys Pro Ala Asn Leu Asp Met Asp
 485 490 495
 Ala Phe Leu Pro Pro Ala His Ala Gln Gln Ala Pro Arg Val Asn Ala
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 Pro Ala Ser Arg Lys Gln Ser Asp Ser Glu Arg Ile Glu Gly Leu Arg
 515 520 525
 Lys Gly His Asp Ser Met Cys Gln Val Leu Ser Ser Arg His Arg Asn
 530 535 540
 Leu Asp Val Val Arg Ala Ile Trp Thr Ala Gly Asp Ala Lys Thr Ser
 545 550 555 560
 Val Glu Ser Val Val Asn Met Lys Asp Gln Ala Ile Leu Val Asp Ile
 565 570 575
 Leu Asn Ile Met Leu Leu Lys Lys Ser Leu Trp Asn Leu Asp Met Cys
 580 585 590
 Val Val Val Leu Pro Arg Leu Lys Glu Leu Leu Ser Ser Lys Tyr Glu
 595 600 605
 Asn Tyr Val His Thr Ser Cys Ala Cys Leu Lys Leu Ile Leu Lys Asn
 610 615 620
 Phe Thr Ser Leu Phe Asn Gln Asn Ile Lys Cys Pro Pro Ser Gly Ile
 625 630 635 640
 Asp Ile Thr Arg Glu Glu Arg Tyr Asn Lys Cys Ser Lys Cys Tyr Ser
 645 650 655
 Tyr Leu Ile Ala Thr Arg Gly Tyr Val Glu Glu Lys Gln His Val Ser
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 Leu Glu
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Asn Lys Gly Lys Glu Ile Ser Phe Ala Asp Val Ile Ser Val Asn Pro
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Glu Leu Leu Asp Ala Val Leu Ala Pro Thr Asn Val Lys Glu Asn Met
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Pro Pro Gln Arg Asn Val Ser Ser Gln Asn His Lys Arg Lys Thr Ile
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Ser Lys Ile Pro Ala Pro Lys Glu Val Ala Ala Lys Asn Ser Leu Leu
100 105 110

Ser Glu Ser Gly Ala Gln Ser Val Leu Arg Glu Arg Ser Thr Arg Met
115 120 125

Thr Ala Ile His Glu Thr Leu Pro Tyr Glu Asn Glu Met Glu Ala Glu
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Ser Thr Pro Leu Pro Ile Gln Gln Asn Ser Val Gln Ala Arg Ser Arg
145 150 155 160

Ser Thr Lys Val Ser Ile Ala Glu Glu Pro Arg Leu Gln Thr Arg Ile
165 170 175

Ser Glu Ile Val Glu Glu Ser Leu Pro Ser Gly Arg Asn Asn Gln Gly
180 185 190

Arg Arg Lys Ser Asn Ile Val Lys Glu Met Glu Lys Met Lys Asn Lys
195 200 205

Arg Glu Glu Gln Arg Ala Gln Asn Tyr Glu Arg Arg Met Lys Arg Ala
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Gln Asp Tyr Asp Thr Ser Val Pro Asn Trp Glu Phe Gly Lys Met Ile
225 230 235 240

Lys Glu Phe Arg Ala Thr Met Asp Cys His Arg Ile Ser Met Ala Asp
245 250 255

Pro Ala Glu Glu His Arg Ile Cys Val Cys Val Arg Lys Arg Pro Leu
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Asn Lys Gln Glu Leu Ser Lys Lys Glu Ile Asp Ile Ile Ser Val Pro
275 280 285

Ser Lys Asn Ile Val Leu Val His Glu Pro Lys Leu Lys Val Asp Leu
290 295 300

Thr Lys Tyr Leu Glu Asn Gln Ala Phe Arg Phe Asp Phe Ser Phe Asp
305 310 315 320

Glu Thr Ala Thr Asn Glu Val Val Tyr Arg Phe Thr Ala Arg Pro Leu
 325 330 335
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 340 345 350
 Gln Thr Gly Ser Gly Lys Thr His Thr Met Gly Gly Asp Phe Ser Gly
 355 360 365
 Lys Ser Gln Asn Val Ser Lys Gly Val Tyr Ala Phe Ala Ser Arg Asp
 370 375 380
 Val Phe Leu Leu Leu Asp Gln Pro Arg Tyr Lys His Leu Asp Leu Asp
 385 390 395 400
 Val Phe Val Thr Phe Phe Glu Ile Tyr Asn Gly Lys Val Phe Asp Leu
 405 410 415
 Leu Asn Lys Lys Thr Lys Leu Arg Val Leu Glu Asp Ala Lys Gln Glu
 420 425 430
 Val Gln Val Val Gly Leu Leu Glu Lys Gln Val Ile Ser Ala Asp Asp
 435 440 445
 Val Phe Lys Met Ile Glu Ile Gly Ser Ala Cys Arg Thr Ser Gly Gln
 450 455 460
 Thr Phe Ala Asn Thr Ser Ser Ser Arg Ser His Ala Cys Leu Gln Ile
 465 470 475 480
 Ile Leu Arg Arg Gly Ser Lys Leu His Gly Lys Phe Ser Leu Val Asp
 485 490 495
 Leu Ala Gly Asn Glu Arg Gly Val Asp Thr Ala Ser Ala Asp Arg Ile
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 Thr Arg Met Lys Gly Ala Glu Ile Asn Arg Ser Leu Ala Leu Lys
 515 520 525
 Glu Cys Ile Arg Ala Leu Gly Gln Asn Lys Ser His Thr Pro Phe Arg
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 Glu Ser Lys Leu Thr Gln Ile Leu Arg Asp Ser Phe Ile Gly Glu Asn
 545 550 555 560
 Ser Arg Thr Cys Met Ile Ala Met Leu Ser Pro Gly Phe Asn Ser Cys
 565 570 575
 Glu Tyr Thr Leu Asn Thr Leu Arg Tyr Ala Asp Arg Val Lys Glu Leu
 580 585 590
 Ser Pro Gln Asn Ala Glu Thr Asn Asp Asp Asn Leu Gln Met Glu Asp
 595 600 605
 Ser Gly Gly Ser His Ala Ser Ile Glu Gly Leu Gln Leu Gln Asp Asp
 610 615 620
 Phe Leu Leu Lys Asp Glu Glu Leu Ser Thr His Asn Ser Phe Gln Asp
 625 630 635 640
 Ala Leu Asn Arg Val Gly Glu Leu Glu Asp Lys Ala Val Asp Glu Leu
 645 650 655

Arg Glu Leu Val Gln Lys Glu Pro Glu Trp Thr Asn Leu Leu Gln Met
 660 665 670
 Thr Glu Gln Pro Asp Tyr Asp Leu Glu Asn Phe Val Met Gln Ala Glu
 675 680 685
 Tyr Leu Ile Gln Glu Arg Ser Lys Val Leu Ile Ala Leu Gly Asp Ser
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 Ile Phe Phe Pro Trp Lys Gly Val Leu Met Val Gly Pro Pro Gly Thr
 35 40 45
 Gly Lys Thr Met Leu Ala Lys Ala Val Ala Thr Glu Cys Gly Thr Thr
 50 55 60
 Phe Phe Asn Val Ser Ser Ala Ser Leu Thr Ser Lys Tyr His Gly Glu
 65 70 75 80
 Ser Glu Lys Leu Val Arg Leu Leu Phe Glu Met Ala Arg Phe Tyr Ala
 85 90 95
 Pro Ser Thr Ile Phe Ile Asp Glu Ile Asp Ser Ile Cys Ser Lys Arg
 100 105 110
 Gly Thr Gly Ser Glu His Glu Ala Ser Arg Arg Val Lys Ser Glu Leu
 115 120 125
 Leu Ile Gln Met Asp Gly Val Ser Gly Pro Ser Ala Gly Glu Glu Ser
 130 135 140
 Ser Lys Met Val Met Val Leu Ala Ala Thr Asn Phe Pro Trp Asp Ile
 145 150 155 160

Asp	Glu	Ala	Leu	Arg	Arg	Arg	Leu	Glu	Lys	Arg	Ile	Tyr	Ile	Pro	Leu	
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Pro	Glu	Ile	Asp	Gly	Arg	Arg	Glu	Gln	Leu	Leu	Arg	Ile	Asn	Leu	Lys	Glu
	180						185				190					
Val	Pro	Leu	Ala	Asp	Asp	Ile	Asp	Leu	Lys	Ser	Ile	Ala	Glu	Lys	Met	
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	35						40					45				
Gly	Lys	Thr	Leu	Ile	Ala	Arg	Ala	Ile	Ala	Ser	Glu	Ser	Ser	Ser	Thr	
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Phe	Phe	Thr	Val	Ser	Ser	Thr	Asp	Leu	Ser	Ser	Lys	Trp	Arg	Gly	Asp	
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Ser	Glu	Lys	Ile	Val	Arg	Leu	Leu	Phe	Glu	Leu	Ala	Arg	Phe	Tyr	Ala	
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180															
Asp	Glu	Ile	Asn	Tyr	Asp	Asp	Leu	Ala	Ala	Arg	Thr	Glu	Gly	Phe	Ser
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Thr	Gly	Lys	Thr	Leu	Leu	Ala	Arg	Ala	Val	Ala	His	His	His	Thr	Asp
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Lys	Phe	Ile	Arg	Val	Ser	Gly	Ala	Glu	Leu	Val	Gln	Lys	Tyr	Ile	Gly
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Glu	Gly	Ser	Arg	Met	Val	Arg	Glu	Leu	Phe	Val	Met	Ala	Arg	Glu	His
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Ala	Pro	Ser	Ile	Ile	Phe	Met	Asp	Glu	Ile	Asp	Ser	Ile	Gly	Ser	Thr
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Arg	Val	Glu	Gly	Ser	Gly	Gly	Asp	Ser	Glu	Val	Gln	Arg	Thr	Met	
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Leu	Glu	Leu	Leu	Asn	Gln	Leu	Asp	Gly	Phe	Glu	Thr	Ser	Lys	Asn	Ile
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Leu Arg Pro Gly Arg Ile Asp Arg Lys Ile Glu Phe Pro Pro Pro Ser
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 Val Ala Ala Arg Ala Glu Ile Leu Arg Ile His Ser Arg Lys Met Asn
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 35 40 45
 Gly Lys Thr Leu Leu Ala Lys Ala Ile Ala Gly Glu Ala Lys Val Pro
 50 55 60
 Phe Phe Thr Ile Ser Gly Ser Asp Phe Val Glu Met Phe Val Gly Val
 65 70 75 80
 Gly Ala Ser Arg Val Arg Asp Met Phe Glu Gln Ala Lys Lys Ala Ala
 85 90 95
 Pro Cys Ile Ile Phe Ile Asp Glu Ile Asp Ala Val Gly Arg Gln Arg
 100 105 110
 Gly Ala Gly Leu Gly Gly His Asp Glu Arg Glu Gln Thr Leu Asn
 115 120 125
 Gln Met Leu Val Glu Met Asp Gly Phe Glu Gly Asn Glu Gly Ile Ile
 130 135 140
 Val Ile Ala Ala Thr Asn Arg Pro Asp Val Leu Asp Pro Ala Leu Leu
 145 150 155 160

Arg Pro Gly Arg Phe Asp Arg Gln Val Val Val Gly Leu Pro Asp Val
 165 170 175
 Arg Gly Arg Glu Gln Ile Leu Lys Val His Met Arg Arg Val Pro Leu
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 Ala Pro Asp Ile Asp Ala Ala Ile Ile Ala Arg Gly Thr Pro Gly Phe
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 35 40 45
 Cys Gly Lys Thr Leu Leu Ala Ser Ala Val Ala Gln Gln Cys Gly Leu
 50 55 60
 Asn Phe Ile Ser Val Lys Gly Pro Glu Ile Leu Asn Lys Phe Ile Gly
 65 70 75 80
 Ala Ser Glu Gln Asn Ile Arg Glu Leu Phe Glu Arg Ala Gln Ser Val
 85 90 95
 Lys Pro Cys Ile Leu Phe Phe Asp Glu Phe Asp Ser Ile Ala Pro Lys
 100 105 110
 Arg Gly His Asp Ser Thr Gly Val Thr Asp Arg Val Val Asn Gln Leu
 115 120 125
 Leu Thr Gln Met Asp Gly Ala Glu Gly Leu Asp Gly Val Tyr Ile Leu
 130 135 140
 Ala Ala Thr Ser Arg Pro Asp Leu Ile Asp Ser Ala Leu Leu Arg Pro
 145 150 155 160

Gly Arg Leu Asp Lys Ser Val Ile Cys Asn Ile Pro Thr Glu Ser Glu
 165 170 175
 Arg Leu Asp Ile Leu Gln Ala Ile Val Asn Ser Lys Asp Lys Asp Thr
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 Gly Gln Lys Lys Phe Ala Leu Glu Lys Asn Ala Asp Leu Lys Leu Ile
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 35 40 45
 Cys Gly Lys Thr Leu Leu Ala Arg Gln Ile Gly Lys Met Leu Asn Ala
 50 55 60
 Arg Glu Pro Lys Val Val Asn Gly Pro Glu Ile Leu Asn Lys Tyr Val
 65 70 75 80
 Gly Glu Ser Glu Ala Asn Ile Arg Lys Leu Phe Ala Asp Ala Glu Glu
 85 90 95
 Glu Gln Arg Arg Leu Gly Ala Asn Ser Gly Leu His Ile Ile Phe
 100 105 110
 Asp Glu Ile Asp Ala Ile Cys Lys Gln Arg Gly Ser Met Ala Gly Ser
 115 120 125
 Thr Gly Val His Asp Thr Val Val Asn Gln Leu Leu Ser Lys Ile Asp
 130 135 140
 Gly Val Glu Gln Leu Asn Asn Ile Leu Val Ile Gly Met Thr Asn Arg
 145 150 155 160

Pro Asp Leu Ile Asp Glu Ala Leu Leu Arg Pro Gly Arg Leu Glu Val
 165 170 175
 Lys Met Glu Ile Gly Leu Pro Asp Glu Lys Gly Arg Leu Gln Ile Leu
 180 185 190
 His Ile His Thr Ala Arg Met Arg Gly His Gln Leu Leu Ser Ala Asp
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 35 40 45
 Ile Ile Ser Leu Ser Gly His Thr Ser Pro Val Asp Ser Val Lys Phe
 50 55 60
 Asn Ser Ser Glu Glu Leu Val Val Ala Gly Ser Gln Ser Gly Thr Met
 65 70 75 80
 Lys Ile Tyr Asp Leu Glu Pro Ala Lys Ile Val Arg Thr Leu Thr Gly
 85 90 95
 His Arg Asn Ser Ile Arg Cys Met Asp Phe His Pro Phe Gly Glu Phe
 100 105 110
 Val Ala Ser Gly Ser Thr Asp Thr Asn Val Lys Leu Trp Asp Val Arg
 115 120 125
 Arg Lys Gly Cys Ile Tyr Thr Tyr Lys Gly His Ser Asp Gln Val Asn
 130 135 140
 Met Ile Lys Phe Ser Pro Asp Gly Lys Trp Leu Val Thr Ala Ser Glu
 145 150 155 160

Asp Thr Thr Ile Lys Glu Trp Asp Leu Thr Met Gly Lys Leu Phe Gln
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 Glu Phe Lys Asn His Thr Gly Gly Val Thr Gly Ile Glu Phe His Pro
 180 185 190
 Asn Glu Phe Leu Leu Ala Ser Gly Ser Ser Asp Arg Thr Val Gln Phe
 195 200 205
 Trp Asp Leu Glu Thr Phe Gln Leu Val Ser Ser Thr Ser Pro Gly Ala
 210 215 220
 Ser Ala Val Arg Ser Ile Ser Phe His Pro Asp Gly Ser Tyr Leu Phe
 225 230 235 240
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 Gly Asp Asp Cys Arg Val Asn Leu Trp Ser Ile Asn Lys Pro Asn Cys
 35 40 45
 Ile Met Ser Leu Thr Gly His Thr Ser Pro Val Glu Ser Val Arg Leu
 50 55 60
 Asn Thr Pro Glu Glu Leu Ile Val Ala Gly Ser Gln Ser Gly Ser Ile
 65 70 75 80
 Arg Val Trp Asp Leu Glu Ala Ala Lys Ile Leu Arg Thr Leu Met Gly
 85 90 95
 Leu Lys Ala Asn Ile Cys Ser Leu Asp Phe His Pro Tyr Gly Glu Phe
 100 105 110
 Val Ala Ser Gly Ser Gln Asp Thr Asn Ile Lys Leu Trp Asp Ile Arg
 115 120 125
 Arg Lys Gly Cys Val Phe Arg Tyr Arg Gly His Ser Gln Ala Val Arg
 130 135 140

Cys Leu Arg Phe Ser Pro Asp Gly Lys Trp Leu Ala Ser Ala Ala Asp
 145 150 155 160

Asp His Thr Val Glu Leu Trp Asp Leu Thr Ala Gly Lys Met Met Ser
 165 170 175

Glu Phe Pro Gly His Thr Gly Pro Val Asn Val Val Glu Phe His Pro
 180 185 190

Asn Glu Tyr Leu Leu Ala Ser Gly Ser Ser Asp Gly Thr Ile Arg Phe
 195 200 205

Trp Asp Leu Glu Lys Phe Gln Val Val Ser Arg Ile Glu Gly Glu Pro
 210 215 220

Gly Pro Val Arg Ser Val Leu Phe Asn Pro Asp Gly Cys Cys Leu Tyr
 225 230 235 240

Ser Gly Cys Gln Asp Ser Leu Arg Val Tyr Gly Trp Glu
 245 250

<210> 12

<211> 250

<212> PRT

<213> Homo sapiens

<220>

<221> misc_feature

<223> TFIID WD40 repeat region

<400> 12

Lys Thr Ala Ser Glu Leu Lys Ile Leu Tyr Gly His Ser Gly Pro Val
 1 5 10 15

Tyr Gly Ala Ser Phe Ser Pro Asp Arg Asn Tyr Leu Leu Ser Ser Ser
 20 25 30

Glu Asp Gly Thr Val Arg Leu Trp Ser Leu Gln Thr Phe Thr Cys Leu
 35 40 45

Val Gly Tyr Lys Gly His Asn Tyr Pro Val Trp Asp Thr Gln Phe Ser
 50 55 60

Pro Tyr Gly Tyr Tyr Phe Val Ser Gly Gly His Asp Arg Val Ala Arg
 65 70 75 80

Leu Trp Ala Thr Asp His Tyr Gln Pro Leu Arg Ile Phe Ala Gly His
 85 90 95

Leu Ala Asp Val Asn Cys Thr Arg Phe His Pro Asn Ser Asn Tyr Val
 100 105 110

Ala Thr Gly Ser Ala Asp Arg Thr Val Arg Leu Trp Asp Val Leu Asn
 115 120 125

Gly Asn Cys Val Arg Ile Phe Thr Gly His Lys Gly Pro Ile His Ser
 130 135 140
 Leu Thr Phe Ser Pro Asn Gly Arg Phe Leu Ala Thr Gly Ala Thr Asp
 145 150 155 160
 Gly Arg Val Leu Leu Trp Asp Ile Gly His Gly Leu Met Val Gly Glu
 165 170 175
 Leu Lys Gly His Thr Asp Thr Val Cys Ser Leu Arg Phe Ser Arg Asp
 180 185 190
 Gly Glu Ile Leu Ala Ser Gly Ser Met Asp Asn Thr Val Arg Leu Trp
 195 200 205
 Asp Ala Ile Lys Ala Phe Glu Asp Leu Glu Thr Asp Asp Phe Thr Thr
 210 215 220
 Ala Thr Gly His Ile Asn Leu Pro Glu Asn Ser Gln Glu Leu Leu Leu
 225 230 235 240
 Gly Thr Tyr Met Thr Lys Ser Thr Pro Val
 245 250
 <210> 13
 <211> 251
 <212> PRT
 <213> Thermomonospora curvata
 <220>
 <221> misc_feature
 <223> putative serine/threonine kinase PkwA WD40 repeat region
 <400> 13
 Ala Ser Gly Asp Glu Leu His Thr Leu Glu Gly His Thr Asp Trp Val
 1 5 10 15
 Arg Ala Val Ala Phe Ser Pro Asp Gly Ala Leu Leu Ala Ser Gly Ser
 20 25 30
 Asp Asp Ala Thr Val Arg Leu Trp Asp Val Ala Ala Ala Glu Glu Arg
 35 40 45
 Ala Val Phe Glu Gly His Thr His Tyr Val Leu Asp Ile Ala Phe Ser
 50 55 60
 Pro Asp Gly Ser Met Val Ala Ser Gly Ser Arg Asp Gly Thr Ala Arg
 65 70 75 80
 Leu Trp Asn Val Ala Thr Gly Thr Glu His Ala Val Leu Lys Gly His
 85 90 95
 Thr Asp Tyr Val Tyr Ala Val Ala Phe Ser Pro Asp Gly Ser Met Val
 100 105 110

Ala Ser Gly Ser Arg Asp Gly Thr Ile Arg Leu Trp Asp Val Ala Thr
115 120 125

Gly Lys Glu Arg Asp Val Leu Gln Ala Pro Ala Glu Asn Val Val Ser
130 135 140

Leu Ala Phe Ser Pro Asp Gly Ser Met Leu Val His Gly Ser Asp Ser
145 150 155 160

Thr Val His Leu Trp Asp Val Ala Ser Gly Glu Ala Leu His Thr Phe
165 170 175

Glu Gly His Thr Asp Trp Val Arg Ala Val Ala Phe Ser Pro Asp Gly
180 185 190

Ala Leu Leu Ala Ser Gly Ser Asp Asp Arg Thr Ile Arg Leu Trp Asp
195 200 205

Val Ala Ala Gln Glu Glu His Thr Thr Leu Glu Gly His Thr Glu Pro
210 215 220

Val His Ser Val Ala Phe His Pro Glu Gly Thr Thr Leu Ala Ser Ala
225 230 235 240

Ser Glu Asp Gly Thr Ile Arg Ile Trp Pro Ile
245 250

<210> 14

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> (His)6 or 6xHis tag

<400> 14

His His His His His His
1 5

<210> 15

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> katanin p80 peptide

<400> 15

Asp Ala Ser Met Met Ala Met
1 5

<210> 16
<211> 5
<212> PRT
<213> Artificial Sequence
<220>
<223> katanin p80 peptide
<400> 16
Ile Gln Gly Leu Arg
1 5